



vision of Recra Environmental, Inc.

Virtual Laboratories Everywhere

### Recra LabNet Philadelphia **Analytical Report**

Client: TNU-HANFORD B99-008

**RFW#**: 9904L707 **SDG#**: H0386 SAF#: B99-008

W.O. #: 10985-001-001-9999-00

Date Received: 04,

### **INORGANIC CASE NARRATIVE**

1. This narrative covers the analyses of 11 water samples.

2. The samples were prepared and analyzed in accordance with the meth attached glossary.

- 3. Sample holding times as required by the method and/or contract were met for Hardness, however pH, Biochemical Oxygen Demand and Nitrate were received past hold.
- 4. The cooler temperatures were recorded on the chain-of-custody.
- 5. The method blanks were within method criteria.
- 6. The Laboratory Control Samples (LCS) were within the laboratory control limits. The duplicate LCS for Hardness was within the 20% Relative Percent Difference (RPD) control limit.
- 7. The matrix spike recoveries were within the 75-125% control limits.
- 8. The replicate analyses were within the 20% RPD control limit.

Vice President

Philadelphia Analytical Laboratory

njp\i04-707

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 17 pages.

### WET CHEMISTRY METHODS GLOSSARY FOR ANALYSIS OF WATER SAMPLES

	EPA 600	SW846	<u>OTHER</u>
Acidity	305.1		
Alkalinity Bicarbonate Carbonate	3104		
BOD	405.1		_5210B (b)
Ion Chromatography:	<del>-</del>		<del>-</del>
Bromide Chloride Fluoride	300.0	9056	
Nitrite Nitrate Phosphate		9056	
Sulfate Formate Acetate Oxalate	300.0	9056	
Chloride	325.2	<u> </u>	
Chlorine Residual		_	
Cyanide Amenable to Chlorination	335.2	9010A	
Cyanide (Total)	335.2	9010A 9012	ILM04.0 (c)
Cyanide, Weak Acid Dissociable		<del></del>	412 (a)4500CN-I (b)
COD	410.4 (mod)		5220 C (b)
Color	110.2		_
Corrosivity (by Coupon)		1110 (mod)	
Chromium VI		7196A	_3500Cr-D (b)
Fluoride	340.2	<del></del>	_
Hardness, Calcium	 215.2		
Hardness, Total	130.2		
Iodide	<b>X</b>		_ASTM D19P202 (1)
Surfactant	425.1		
Nitrate-Nitrite Nitrate Nitrite	353.2		
Ammonia	350.3		
Total Kjeldahl Nitrogen Organic Nitrogen			
Total Organic Inorganic Carbon	415.1	9060	
Oil and Grease	4)23.1	9070	
√pH pH, Paper	$\sqrt{150.1}$	9040A9041A	
Petroleum Hydrocarbons, Total Recoverable	418.1		
Phenol	420.1 420.2	_9065 _9066	
Ortho PhosphateTotal Phosphate			_4500-P BC
Salinity	_		_210A (a) _2520B (b)
Settleable Solids	160.5		
Sulfide	376.2 376.1	9030A	
ReactiveCyanideSulfide		_Sec 7.3	
Silica	370.1		
Sulfite	377.1		
Sulfate	375.4	_9038	
Specific Conductance		_9050	
Specific Gravity	_		_213E (a)
_TCLPTCLV		_1311	
Synthetic Precipitation Leach		_1312	
Total _Dissolved _Suspended _Solids	160123		
Total Organic Halides	450.1	9020B	
Turbidity	180.1		
Volatile SolidsTotalDissolvedSuspende	d160.4		
Other:	Method:		002
RFW 21-21-034/A-08/95			

### METHOD REFERENCES AND DATA QUALIFIERS

### **DATA QUALIFIERS**

- U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.
- \* = Indicates that the original sample result is greater than 4x the spike amount added.

### **ABBREVIATIONS**

MB = Method or Preparation Blank.

MS = Matrix Spike.

MSD = Matrix Spike Duplicate.

REP = Sample Replicate

LC = Laboratory Control Sample.

NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a replicate, spike or sample duplicate analysis respectively.

### ANALYTICAL WET CHEMISTRY METHODS

- 1. ASTM Standard Methods.
- 2. USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).
- 3. Test Methods for Evaluating Solid Waste (USEPA SW-846).
- a. Standard Methods for the Examination of Water and Waste, 16 ed., (1989).
- b. Standard Methods for the Examination of Water and Waste, 17 ed., (1983)
- c. <u>Method of Soil Analysis</u>, Part 1, Physical and Mineralogical Methods, 2nd. Ed. (1986)
- d. <u>Method of Soil Analysis</u>, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965)
- e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.
- f. Code of Federal Regulations.

RFW 21-21L-034/D-06/96

### INORGANICS DATA SUMMARY REPORT 05/14/99

CLIENT: TNU-HANFORD B99-008

RECRA LOT #: 9904L707

SAMPLE	SITE ID	111171		*******	REPORTING LIMIT	DILUTION
SWILTE	SITE ID	ANALYTE	RESULT	UNITS	PIMIT	FACTOR
-001	BOV&J2	BOD 5 Day	1.0 u		1.0	1.0
		Nitrate by IC	120	MG/L	6.2	25
	~	Hardness	231	MG/L	2.0	1.0
		рн	8.5	PH UNIT		1.0
-002	B0V8J3	BOD 5 Day	1.0 u	MG/L	1.0	1.0
	•	Nitrate by IC	120	MG/L	6.2	25
		Hardness	225	MG/L	2.0	1.0
		рн	8.2	PH UNIT	S 0.01	1.0
-003	BOVSJ4	BOD 5 Day	1.0	MG/L	1.0	1.0
		Nitrate by IC	120	MG/L	6.2	25
		Hardness	217	MG/L	2.0	1.0
		рН	8.3	PH UNIT	S 0.01	1.0
-004	BOV8J5	BOD 5 Day	1.0 u	MG/L	1.0	1.0
		Nitrate by IC	120	MG/L	6.2	25
		Hardness	220	MG/L	2.0	1.0
		pН	8.3	PH UNIT	8 0.01	1.0
-005	B0V8J6	BOD 5 Day	1.0 u	MG/L	1.0	1.0
		Nitrate by IC	120	MG/L	6.2	25
		Hardness	225	MG/L	2.0	1.0
		рH	8.0	PH UNIT	9 0.01	1.0
-006	BOV8J7	BOD 5 Day	1.0 u	MG/L	1.0	1.0
		Nitrate by IC	110	MG/L	6.2	25
		Hardness	257	MG/L	2.0	1.0
		рн	8.0	PH UNIT	S 0.01	1.0

### INORGANICS DATA SUMMARY REPORT 05/14/99

CLIENT: TNU-HANFORD B99-008

RECRA LOT #: 9904L707

					reporting	DILUTION
SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	LIMIT	FACTOR
	************				**********	#######
-007	BOV8J8	BOD 5 Day	1.0 u	MG/L	1.0	1.0
		Nitrate by IC	78	MG/L	6.2	25
	-	Hardness	219	MG/L	2.0	1.0
		рн	8.0	PH UNIT	5 0.01	1.0
-008	BOV8J9	BOD 5 Day	1.0 u	MG/L	1.0	1.0
	•	Nitrate by IC	440	MG/L	25	100
		Hardness	375	MG/L	4.0	1.0
		рн	7.8	PH UNIT	S 0.01	1.0
-009	BOVSKO	BOD 5 Day	1.0 u	MG/L	1.0	1.0
		Nitrate by IC	110	MG/L	6.2	25
		Hardness	216	MG/L	2.0	1.0
		рн	8.0	PH UNIT	S 0.01	1.0
-010	BOVSK1	BOD 5 Day	1.0 u	MG/L	1.0	1.0
		Nitrate by IC	64	MG/L	2.5	10
		Hardness	141	MG/L	2.0	1.0
		pH	8.0	PH UNIT	S 0.01	1.0
-011	BOVSK2	BOD 5 Day	1.0 u	MG/L	1.0	1.0
		Nitrate by IC	15	MG/L	0.50	2.0
		Hardness	92.7	MG/L	1.0	1.0
		рн	8.1	PH UNIT	S 0.01	1.0

### INORGANICS METHOD BLANK DATA SUMMARY PAGE 05/14/99

CLIENT: TNU-HANFORD B99-008

RECRA LOT #: 9904L707

SAMPLE	SITE ID	ANALYTE	result	UNITS	REPORTING LIMIT	DILUTION PACTOR
******	******	*****		=====		****
BLANK10	99LIB006-MB1	BOD 5 Day	1.0 u	MG/L	1.0	1.0
BLANK10	99LIC045-MB1 ~	Nitrate by IC	0.25 u	MG/L	0.25	1.0
BLANK10	99LHDA03-MB1	Hardness	1.0 u	MG/L	1.0	1.0
BLANK10	99LIC046-MB1	Nitrate by IC	0.25 u	MG/L	0.25	1.0

### INORGANICS ACCURACY REPORT 05/14/99

CLIENT: TNU-HANFORD B99-008

RECRA LOT #: 9904L707

			SPIKED	INITIAL	spiked		DILUTION
SAMPLE	SITE ID	ANALYTE	SAMPLE	RESULT	INDOMA	*RECOV	Factor (SPK)
			******				********
-006	BOV8J7	Hardness	337	257	80.0	99.6	1.0
-007	BOVSJS	Nitrate by IC	210	78	120	103.1	25
BLANK10	99LIB006-MB1	BOD 5 Day	200	1.0 u	200	100	1.0
BLANK10	99LIC045-MB1	Nitrate by IC	4.9	0.25u	5.0	98.9	1.0
BLANK10	99LHDA03-MB1	Hardness	41.1	1.0 u	40.0	102.8	1.0
		Hardness MSD	42.7	1.0 u	40.0	106.8	1.0
BI.ANKIO	99LIC046-MB1	Nitrate by IC	4.8	0.25u	5.0	95.5	1.0

#### INORGANICS DUPLICATE SPIKE REPORT 05/14/99

CLIENT: TNU-HANFORD B99-008

RECRA LOT #: 9904L707

WORK ORDER: 10985-001-001-9999-00

BLANK10 99LHDA03-MB1 Hardness 102.8 106.8 3.8

### INORGANICS PRECISION REPORT 05/14/99

CLIENT: TNU-HANFORD B99-008

RECRA LOT #: 9904L707

			INITIAL			DILUTION
SAMPLE	SITE ID	ANALYTE	RESULT	REPLICATE	RPD	FACTOR (REP)
	***************************************					**********
-001REP	B0V8J2	BOD 5 Day	1.0 u	1.0 u	NC	1.0
-006REP	BOV8J7	Hardness	257	257	0.077	1.0
-007RBP	BOVEJS	Nitrate by IC	78	78	0.24	25
-011REP	BOV8K2	pH	8.1	8.1	0.1	1.0

## Recra LabNet - Lionville Laboratory INORGANIC ANALYTICAL DATA PACKAGE FOR TNU-HANFORD B99-008

DATE RECEIVED: 04/16/99 RFW LOT # :9904L707

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B0V8J2						
BIOCHEMICAL OXYGEN D BOD 5 DAY NITRATE BY IC HARDNESS PH	001 001 REP 001 001	W W W W	99LIB006 99LIB006 99LIC045 99LHDA03 99LPH039	04/14/99 04/14/99 04/14/99 04/14/99 04/14/99	04/21/99 04/21/99 04/21/99 04/29/99 04/16/99	04/26/99 04/26/99 04/21/99 04/29/99 04/16/99
B0V8J3						
BIOCHEMICAL OXYGEN D NITRATE BY IC HARDNESS PH	002 002 002 002	W W W	99LIB006 99LIC045 99LHDA03 99LPH039	04/14/99 04/14/99 04/14/99 04/14/99	04/21/99 04/21/99 04/29/99 04/16/99	04/26/99 04/21/99 04/29/99 04/16/99
B0V8J4						
BIOCHEMICAL OXYGEN D NITRATE BY IC HARDNESS PH	003 003 003 003	W W W W	99LIB006 99LIC045 99LHDA03 99LPH039	04/14/99 04/14/99 04/14/99 04/14/99	04/21/99 04/21/99 04/29/99 04/16/99	04/26/99 04/21/99 04/29/99 04/16/99
B0V8J5						
BIOCHEMICAL OXYGEN D NITRATE BY IC HARDNESS PH	004 004 004 004	W W W	99LIB006 99LIC045 99LHDA03 99LPH039	04/14/99 04/14/99 04/14/99 04/14/99	04/21/99 04/21/99 04/29/99 04/16/99	04/26/99 04/21/99 04/29/99 04/16/99
B0V8J6						
BIOCHEMICAL OXYGEN D NITRATE BY IC HARDNESS PH	005 005 005 005	W W W	99LIB006 99LIC045 99LHDA03 99LPH039	04/14/99 04/14/99 04/14/99 04/14/99	04/21/99 04/21/99 04/29/99 04/16/99	04/26/99 04/21/99 04/29/99 04/16/99
B0V8J7						
BIOCHEMICAL OXYGEN D	006	W	99LIB006	04/14/99	04/21/99	04/26/99

## Recra LabNet - Lionville Laboratory INORGANIC ANALYTICAL DATA PACKAGE FOR TNU-HANFORD B99-008

DATE RECEIVED: 04/16/99 RFW LOT # :9904L707

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
NITRATE BY IC	006	W	99LIC045	04/14/99	04/21/99	04/21/99
HARDNESS	006	W	99LHDA03	04/14/99	04/29/99	04/29/99
HARDNESS	006 REP	W	99LHDA03	04/14/99	04/29/99	04/29/99
HARDNESS -	006 MS	W	99LHDA03	04/14/99	04/29/99	04/29/99
PH	006	W	99LPH039	04/14/99	04/16/99	04/16/99
B0V8J8						
BIOCHEMICAL OXYGEN D	007	W	99LIB006	04/14/99	04/21/99	04/26/99
NITRATE BY IC	007	W	99LIC045	04/14/99	04/21/99	04/21/99
NITRATE BY IC	007 REP	W	99LIC045	04/14/99	04/21/99	04/21/99
NITRATE BY IC	007 MS	W	99LIC045	04/14/99	04/21/99	04/21/99
HARDNESS	007	W	99 <b>LHDA</b> 03	04/14/99	04/29/99	04/29/99
PH	007	W	99LPH039	04/14/99	04/16/99	04/16/99
B0V8J9						
BIOCHEMICAL OXYGEN D	008	W	99LIB006	04/14/99	04/21/99	04/26/99
NITRATE BY IC	008	W	99LIC045	04/14/99	04/21/99	04/21/99
HARDNESS	800	W	99LHDA03	04/14/99	04/29/99	04/29/99
PH	800	W	99LPH039	04/14/99	04/16/99	04/16/99
BOV8KO						
BIOCHEMICAL OXYGEN D	009	W.	99LIB006	04/14/99	04/21/99	04/26/99
NITRATE BY IC	009	W	99LIC046	04/14/99	04/22/99	04/22/99
HARDNESS	009	W	99LHDA03	04/14/99	04/29/99	04/29/99
PH	009	W	99LPH039	04/14/99	04/16/99	04/16/99
B0V8K1						
BIOCHEMICAL OXYGEN D	010	W	99LIB006	04/14/99	04/21/99	04/26/99
NITRATE BY IC	010	W	99LIC046		04/22/99	04/22/99
HARDNESS	010	W	99LHDA03		04/29/99	04/29/99
PH	010	W	99LPH039	04/14/99	04/16/99	04/16/99
B0V8K2						
BIOCHEMICAL OXYGEN D	011	W	99LIB006	04/14/99	04/21/99	04/26/99

### Recra LabNet - Lionville Laboratory INORGANIC ANALYTICAL DATA PACKAGE FOR TNU-HANFORD B99-008

RFW LOT # :9904L707

CLIENT ID /ANALYSIS MTX PREP # COLLECTION EXTR/PREP ANALYSIS RFW # 04/21/99 NITRATE BY IC 011 W 99LIC045 04/14/99 04/21/99 **HARDNESS** 011 W 99LHDA03 04/14/99 04/29/99 04/29/99 PH 011 W 99LPH039 04/14/99 04/16/99 04/16/99 PH 011 REP W 99LPH039 04/14/99 04/16/99 04/16/99 LAB QC:

DATE RECEIVED: 04/16/99

BIOCHEMICAL OXYGEN D	MB1	W	99LIB006	N/A	04/21/99	04/26/99
BOD 5 DAY	MB1 BS	W	99LIB006	N/A	04/21/99	04/26/99
NITRATE BY IC	MB1	W	99LIC045	N/A	04/21/99	04/21/99
NITRATE BY IC	MB1 BS	W	99LIC045	N/A	04/21/99	04/21/99
HARDNESS	MB1	W	99LHDA03	N/A	04/29/99	04/29/99
HARDNESS	MB1 BS	W	99LHDA03	N/A	04/29/99	04/29/99
HARDNESS	MB1 BSD	W	99LHDA03	N/A	04/29/99	04/29/99
NITRATE BY IC	MB1	W	99LIC046	N/A	04/22/99	04/22/99
NITRATE BY IC	MB1 BS	W	99LIC046	N/A	04/22/99	04/22/99

PECRA LabNet Use Only

## Custody Transfer Record/Lab Work Request Page Lof 2

RECRA LabNet

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client TNU-Hanford Bag-008							Refr	igerato	r #		ı								3-			<u>-                                    </u>			
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DL - Drum Liquids	4		5						十			1013	1								<b>V</b>	$\sqrt{}$	$\checkmark$	7	
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WI - Wipe X - Other F - Fish	6		7									1042	V								<b>V</b>	$\overline{}$	<b>/</b>	$\checkmark$	
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**RECRA LabNet Use Only** 99041707

Est. Final Proj. Sampling Date

Lab

DII BOV8K2

**Date Due** 

**Client ID/Description** 

Project Contact/Phone #

**RECRA Project Manager** 

Project #

Date Rec'd

Account #

MATRIX

CODES:

S - Soil

٥. Oil - Drum Solids Drum Liquids EP/TCLP Leachate WI - Wipe Other

SE - Sediment SO - Solid

SL - Sludge Water

### Custody Transfer Record/Lab Work Request Page 2 of 2

Liquid

Solid

Liquid

Solid

Time

1425

Collected Collected

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XXX

**ORGANIC** 

Pest/ PCB

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Refrigerator #

Volume

Preservatives

**ANALYSES** 

Matrix

W

Matrix

Chosen

**(V)** 

MS MSD

REQUESTED

Date

414199

#/Type Container

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Special Instruction	ms:											 	 	1) : Hai Aid 2) / 3) I Coi	nd Delin bill # Ambient Receive ndition Labels I		ed (	Sam	C Pre-ka ka Jal-ka Pre-
	I.		<del></del>			DATE/F	REVISIONS	<u>_</u>					 						=
						$\frac{1}{1}$										$\dashv$			_
						1_1							·						_
l.						<del></del>													_

Bechtel Hanford	Inc.	C	HAIN OF CUST	rody/s	AMPLE	E ANAL	YSIS I	REQUEST	Г	В9	9-008-05	Page <u>1</u>	of <u>3</u>
Collector R. Nielson/M. Baechler			pany Contact ith Maki	Telepho 373-4				Project Coordi FRENT, SJ	nator	Price Code		Data Tu	FRATOUR
Project Designation 200-ZP-1 Process Sampling a	nd Analysis - Bi-Weekly	Samp	ling Location					SAF No. B99-008		R	クチン	45	Days
Ice Chest No. GI6-013			Logbook No.	<u> </u>		<del></del>		Method of Ship Hand deliver	ment	100 lag t	Federa	P Evan	
Shipped To TMARECRA 20N 4//6/19		Offsit	e Property No. A990112,	A99	01/3			Bill of Lading/	Air Bill No	24721		7952 4	
				_				COA	_				
POSSIBLE SAMPLE HAZA	RDS/REMARKS		Preservation	None	None	Cool 4C	HNO3 to p	iH Cool 4C	HCl to pH < Cool 4C	2			
			Type of Container	P	Р	P	P	Р	aGs*				
Special Handling and/or Store Cool 4C	age		No. of Container(s)  Volume	1 20mL	1 125mL	500mL	500mL	l . 1000mL	3 40mL				
	SAMPLE ANALY	YSIS		Activity Scan	pH (Water) - 9040	IC Anions - 300.0 (Nitrate)	Hardness 130.2	- BOD - 405.1	See item (1) Special Instructions	1			j
Sample No.	Matrix *	Sample Date	Sample Time										
30V8J2	Water	4-14-6	19 0935	K	K	Χ	X	K	X				<u> </u>
8L8V0	Water	4-14-9		K	X	X	X	X	X				
0V8J4	Water	4-14-9		K	¥	Y	Ý	Κ	X				
0V8J5	Water	4-14-0		Υ_	X	X	X	Χ	K				<u> </u>
0V8J6	Water	4-14-0	19   1013	<u> </u>	X	X	X	X	X		<u> </u>		
linguished by	Pate/Time 4 14	<u>ا</u>	4. 1A (	te/Time	ERC (1) V	icknowledges t OA - 8240A (S	for nitrate b that the hole SW-846) {2	S by IC 300.0 and Boding time may not Butanone, Aceto ethene, Trichloroe	be met. ne, Carbon t	etrachloride, Ch	loroform,	Matrix Soil Water Vapor Other Solid Other Liquid	
Singuished Bry Son IR No Singuished By Declea	Date/Time 1130 Date/Time	1 some	NEIST /R. NICK	DY 4  15  le/Time te/Time	79	4235 7952 - 7952 47	1 <b>32</b>	} 1	.3				
ABORATORY Received By SECTION	Torke	4/161	199 6930	Tit	le	4235 79	52 4721	Ł			Di	nte/Time	
FINAL SAMPLE Disposal Met DISPOSITION	thod SICTLE	7//4/	110770		<u></u>	Dispos	ed By	·			Di	te/Time	—

Bechtel Hanfor	d Inc.		CH	HAIN OF CUST	FODY/S	AMPL	E ANAL	YSIS	REQUES	Г	B	9-008-05	Page 2	of 3 C
Collector R. Nielson/M. Baechler				iny Contact h Maki	Telepho 373-4	ne No.			Project Coordi TRENT, SJ	nator	Price Code	***	Data Tu	rearound
Project Designation 200-ZP-1 Process Samplin	g and Analysis -	Bi-Weckly/Quar	Sampli	ing Location West					SAF No. B99-008				45	Days
Ice Chest No. Sample Van	PRICAL -	712	Field L	ogbook No.					Method of Ship	ment K	IN FEE	en 2 411	2055	
Shipped To -TMA/RECRA	UTC 10 -	212	Offsite	Property No.	<del></del>				Method of Ship Hand deliver Bill of Lading/	Air Bill N	0.	1172	race	
4/16/99 RIN		<del></del>	İ	1990112,					Ч	4357	1524711	) 1443	6 M62	4121
	<u> </u>			·		<del> </del>	· · · · · · · · · · · · · · · · · · ·		COA	KZR	SZA 1071	<b>ا</b> لاص		
POSSIBLE SAMPLE HA2	ARDS/REMAI	ıks		Preservation	None	None	Cool 4C	HINO3 to   <2	pH Cool 4C	HCl to pH < Cool 4C	2			
				Type of Container	P	P	₽	Р	Р	aGs*				
				No. of Container(s)	1	1	1	· · ·	]	3				
Special Handling and/or St Cool 4C	orage			Volume	20mL	125mL	500mL	500mL	. 1000mL	40mL				
	SAMPL	•	Activity Scan	pH (Water) - 9040	IC Anions - 300.0 (Nitrate)	Hardness 130.2		See item (1) Special Instructions	Ī					
Sample No.	Matrix	• Samp	ole Date	Sample Time				104.34						
B0V8J7	Water	4-	4-90	1 1042	X	X	χ	K	Y	X			A THE STATE	
8L8V08	Water	U~	14-99	1 1105	V	Χ	X	X	ſ Y	X				
B0V8J9	Water	Ų-	14-90	1 1241	Υ .	X	X	又	X	K				
BOV8KO	Water		14.99	_ <del></del>		<u> </u>	X	Х	X	X				
BOV8K1	Water	<u> </u>	14-90	1 1403	Ϋ́	<u>x</u>	ᅩ	X	X	X				
CHAIN OF POSSESSION	Date/Tim	Receive	Names Da	e-Time 15	erc	acknowledges ti	for nitrate l hat the hol	lS by IC 300.0 and Boding time may not 2-Butanone, Aceto	be met.			Matrix Soil Water Vapor	•	
telihodished By A 416	_ Date/Tim	30 10	Wea	liebs / R. Niets	NOV 416	BO GA	ylenechlorido, T	Cetrachioro	ethene, Trichloroe	thene, Trich	loromonofluoro	methane}	Other Solid Other Liquid	
Relighaished By Relighaished By Relighaished By	Date/Tim	15/20	ti	edex Dai	te/Time									
$\partial \epsilon$	cley		-											
LABORATORY Received B SECTION	у	Soller	. 41.	16 199 043	Tid C)	c						Da	te/Time	
FINAL SAMPLE Disposal ! DISPOSITION	Method	0	<del></del>	<del> </del>			Dispose	ed By				Da	te/Time	

Bechtel Hanford	Inc.	С	CHAIN OF CUST	rody/s	AMPLI	E ANAL	YSIS	REQUEST	r	В9	9-008-05	Page 3	of <u>3</u>
Collector			pany Contact	Telepho	ne No.			Project Coordi TRENT, SJ	nator	Price Code		Data Tu	rnaround
R. Nielson/M. Baechler  Project Designation			cith Maki pling Location	373-4	789			SAF No.				45	Days
200-ZP-1 Process Sampling as	nd Analysis - Bi-Week	kly/Quar 200	0 West				•	B99-008		<del></del>			
Ice Chest No. EX_C 9	16-043	Field	l Logbook No.					Method of Ship Hand deliver	ment L	IN Fed	eral Ex	Lons	Ś
Shipped To TMA/RECRA Y/16/99 JUN		Offsi	ite Property No.	4990	1/3			Bill of Lading/A	ie Rill Na	9579521	4732		
								COA					
POSSIBLE SAMPLE HAZAF	RDS/REMARKS		Preservation	None	None	Cool 4C	HNO3 to p	pH Cool 4C	HCl to pH < Cool 4C	2			
			Type of Container	P	P	P	P	P	aGs*				
			No. of Container(s)	1	'	1	<u> </u>	1	3				
Special Handling and/or Stora Cool 4C	ige		Volume	20mL	125mL	500mL	500mL	. 1000mL	40mL				
	CARPER ANAL	***010		Activity Scan	pH (Water) - 9040	IC Anions - 300.0 (Nitrate)	Hardness 130.2	- BOD - 405.1	See item (1) i Special Instructions				<u></u>
	SAMPLE ANAL	YSIS	l										<u> </u>
Sample No.	Matrix •	Sample Date	Sample Time	A FRANK		3,000,074	Wa Ye	a Court	1 # <b>3</b> 6				
BOV8K2	Water	4-142	9 425	X	⊀.	Ϋ́	X	X	X	1			<u> </u>
								-					<del>                                     </del>
CHAIN OF POSSESSION	Date/Time	16 7	int Names	ate/Time	** Sa	IAL INSTR ample analysis acknowledges t	for nitrate !	IS by IC 300.0 and Boding time may not	OD by 405.1 be met.	are for informa	tion only.	Matrix Soil Water	*
the distribution	K Nielson Hill	7 T T T T T T T T T T T T T T T T T T T	r. 18		Methy	OA - 8240A (S ylenechloride, 1	SW-846) (2 Tetrachioro	2-Butanone, Acetor ethene, Trichloroe	ne, Carbon t thene, Trich	etrachloride, Chi loromonofluoror	loroform, methane)	Vapor Other Solid	
Refinitional PLA 4/15 Or		Recaived By	Newon/P Welsi		<b>3</b>							Other Liquid	•
Relinquished By Reyer	Nielson 4 15 PM	Received By Received By	del	ate/Time									
Je	deep												
LABORATORY Received By SECTION	Trolls	4/16/9	14 NH30	Tit	ie						D	ate/Time	
FINAL SAMPLE Disposal Met DISPOSITION	hod	- 448	de la companya de la			Dispos	sed By	····			Da	ate/Time	****



Virtual Laboratories Everywhere

### Recra LabNet Philadelphia **Analytical Report**

Client: TNU-HANFORD B99-008

RFW#: 9904L707

SDG/SAF #: H0386/B99-008

**W.O.** #: 10985-001-001-99

Date Received: 04-16-99

### **GC/MS VOLATILE**

Eleven (11) water samples were collected on 04-14-99.

The samples and their associated QC samples were analyzed according to criteria set forth in Recra OPs based on SW 846 Method 8260A for Client Specified Volatile target compounds on 04-21,23-99.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

- 1. The cooler temperatures upon receipt have been recorded on the chain-of-custody.
- 2. The required holding time for analysis was met.
- 3. All samples with the exception of samples B0V8J2, B0V8J3 and B0V8J4 required 2 to 25-fold dilutions due to high levels of target compounds.
- 4. All surrogate recoveries were within EPA QC limits.
- 5. All matrix spike recoveries were within EPA QC limits.
- 6. The blank spike recovery was within EPA QC limits.
- 7. The method blanks contained the common laboratory contaminants Methylene Chloride and Acetone at levels less than 2x the CROL.
- 8. The pH of sample B0V8J4 exceeded 2.0, indicating that it may not have been properly preserved. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

Date

7 J. Michael Taylor

Vice President

Philadelphia Analytical Laboratory

som\group\data\ voa\tnu04707.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 14 pages.

### **GLOSSARY OF VOA DATA**

### **DATA QUALIFIERS**

- U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
- J = Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- D = Identifies all compounds identified in an analysis at a secondary dilution factor.
- I = Interference.
- NQ = Result qualitatively confirmed but not able to quantify.
- N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
- X = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).
- Y = Additional qualifiers used as required are explained in the case narrative.

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-02

### **GLOSSARY OF VOA DATA**

### **ABBREVIATIONS**

BS	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions
		and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Suffix added to sample number to indicate that results are from a diluted analysis.

NA = Not Applicable.

DF = Dilution Factor.

NR = Not Required.

SP, Z = Indicates Spiked Compound.

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Recra LabNet Philadelphia Sample Discrepancy Report (SDR) SDR #: 4917045
Initiator: M:Ke Keppel RFW Batch: 9904L707 Date: 4/21/94 Samples: 003 Matrix: Water Client: TWO-Hanford Method: Sw846/MCAWW/CLP/ Prep Batch:
1. Reason for SDR a. COC Discrepancy Tech Profile Error Client Request Sampler Error on C-O-C Transcription Error Wrong Test Code Other b. General Discrepancy Missing Sample/Extract Container Broken Wrong Sample Pulled Label ID's Illegible Hold Time Exceeded Insufficient Sample Preservation Wrong Received Past Hold
Improper Bottle Type Not Amenable to Analysis  Note: Verified by [Log-In] or [Prep Group] (circle)signature/date:
The state of the s
Test resulted in a phot 7 for sample 003. All other
samples are phil and the COC and bottle say That OUS
Should also be preserved (pha)
2. Known or Probable Causes(s)
Other Description: A/
3. Discussion and Proposed Action  Re-log  Entire Batch Following Samples: Re-leach Re-extract Re-digest Revise EDD Change Test Code to Place On/Take Off Hold (circle)  Other Description: Note in narrative.
4. Project Manager Instructionssignature/date:  Concur with Proposed Action; See Instruction  Disagree with Proposed Action; See Instruction  Include in Case Narrative  Client Contacted:  Date/Person  Add  Cancel
5. Final Actionsignature/date: De M. (Kul) Tuno of pooling Other Explanation:  Verified re-[log][leach][extract][digest][analysis] (circle)  Included in Case Narrative  Hard Copy COC Revised  Electronic COC Revised  EDD Corrections Completed
When Final Action has been recorded, forward original to QA Specialist for distribution and filing.
Route Distribution of Completed SDR  X Initiator  X Lab Manager: C. Stefanosky  X Project Mgr: Orlette Johnson  X Section Mgr: Siery/Wesson/Daniels  X QA (file): Racioppi  Data Management: Feldman  Sample Prep: Schnell/Doughty/Kauffman  Distribution of Completed SDR  Metals: Doughty  Inorganic: Perrone  GC/LC: Rycklak/Schnell  MS: LeMin/Taylor/Kasdras  Log-in: Toder  Admin: Soos  Other:

Volatiles By GC/MS, Special List

Client: TNU-HANFORD B99-008 Work Order: 10985001001 Page: la

Report Date: 05/13/99 16:1

BOV8J3 BOV8J4 B0V8J5 BOV8J2 B0V8J2 BOV8J2 Cust ID: 004 RFW#: 001 001 MS 001 MSD 002 003 Sample WATER WATER WATER WATER WATER Matrix: WATER Information 1.00 1.00 1.00 1.00 D.F.: 1.00 1.00 UG/L UG/L UG/L UG/L UG/L UG/L Units: 92 94 왐 92 왕 1.2-Dichloroethane-d4 89 왐 103 ક્ષ 104 옿 99 왛 왕 104 샇 98 웋 100 Toluene-d8 100 100 Surrogate 102 102 100 Bromofluorobenzene 99 왐 98 왐 103 ¥ Recovery JВ 2 JB 2 JB 3 JB 3 JB 3 JB 3 Methylene Chloride 3 JB JB 2 JB 2 JB 5 JB 3 JB 2 Acetone 10 U IJ 10 U 10 10 U 10 U 2-Butanone 10 U 5 U 5 U 20 5 U 5 U U Chloroform 5 II 5 U 5 U 5 U 5 U 1800 E Carbon Tetrachloride 5 U 5 Ü J 5 U ş. 90 % Trichloroethene 5 Ü 5 U 5 U U 5 U 5 U Tetrachloroethene 5 U 5 5 U 5 U U 5 II 5 IJ Trichlorofluoromethane

RFW Batch Number: 9904L707

<sup>\*=</sup> Outside of EPA CLP QC limits.

Volatiles By GC/MS, Special List

Report Date: 05/13/99 16:10 © 01001 Page: 30 Client: TNU-HANFORD B99-008 Work Order: 10985001001 Page: 2a RFW Batch Number: 9904L707

	Cust ID:	B0V8J	j	B0V8J	5	B0V8J6	i	B0V8J7	,	B0V8J7	,	BOV8J8	3
Sample Information	RFW#: Matrix: D.F.: Units:	004 DI WATER 25. UG/I	0	005 WATER 1.0 UG/I	0	005 DI WATER 25. UG/I	0	<b>006</b> WATER 1.0 UG/I	0	006 DL WATER 25. UG/L	0	<b>007</b> WATER 1.0 UG/L	00
	1,2-Dichloroethane-d4	107	<del></del>	96	<del>}</del>	109	%	97	8	111	*	98	 *
Surrogate	Toluene-d8	100	ક	101	윰	101	४	98	ક	100	왐	99	ક
Recovery	Bromofluorobenzene	100	용	101	ક	102	8	101	8	102	૪	100	ક્ષ
			= <b>f</b> l===		=fl==	=======	=fl===	== <b>===</b> ==	=f1==	========	=fl===	<b>:==</b> =====	=f1
Methylene C	hloride	88	JBD	3	JB	93	JBD	3	JB	27	JBD	1	JВ
		480	BD	2	JВ	410	BD	2	JВ	50	JBD	3	JB
		250	U	10	U	250	Ū	10	U	250	U	10	U
Chloroform		26	JD	20		26	JD	28		37	JD	21	
Carbon Tetr	achloride	2500	D	1800	E	2400	D	2200	E	4000	D	1900	E
Trichloroet	Trichloroethene		U	5	J	120	U	5	J	120	U	8	
	Tetrachloroethene		U	5	U	120	Ü	5	U	120	U	1	J
	Trichlorofluoromethane			5	U	120	U	5	U	120	U	5	U
*= Outside	of EPA CLP QC limits.												

Volatiles By GC/MS, Special List

RFW Batch Number: 9904L707 Client: TNU-HANFORD B99-008 Work Order: 10985001001 Page: 3a

	Cust ID:	B0V8J8	3	B0V8J9	)	B0V8J9	)	BOV8KO	)	BOV8KO	ı	BOV8K1	L
Sample Information	RFW#: Matrix: D.F.: Units:	007 DI WATER 25. UG/I	0	008 WATER 1.0 UG/I	00	008 DL WATER 25. UG/L	0	009 WATER 1.0 UG/L	0	009 DI WATER 25. UG/I	0	010 WATER 1.0 UG/I	00
	1,2-Dichloroethane-d4	105	*	99	8	108	ક્ષ	102	8	108	૪	102	*
Surrogate	Toluene-d8	100	ક	99	ક્ષ	100	왐	99	ક	100	ક	99	*
Recovery	Bromofluorobenzene	100	ક	100	*	100	ક	99	ક	100	ક	98	*
•			=f1===	==== <b>==</b> =	=fl==:	=	=fl===	======	=fl==		= <b>f</b> 1 <b>=</b> ==		==fl
Methylene C	hloride	31	JBD	1	JВ	32	JBD	1	JB	31	JBD	3	JВ
<del>=</del> '		46	JBD	3	JB	30	JBD	3	JB	37	JBD	5	JB
		250	U	10	U	250	U	10	U	250	U	10	U
Chloroform_		38	JD	30		78	JD	19		60	JD	18	
Carbon Tetr	achloride	2700	D	2000	E	2900	D	1700	Е	2100	D	1000	Е
	Trichloroethene			3	J	120	Ŭ	5	J	120	U	4	J
	Tetrachloroethene			1	J	120	U	1	J	120	U	5	U
	Trichlorofluoromethane			5	U	120	U	5	U	120	U	5	Ū
	of EPA CLP QC limits.												

Volatiles By GC/MS, Special List

RFW Batch Number: 9904L707 Client: TNU-HANFORD B99-008 Work Order: 10985001001 Page: 4a

	Cust ID:	BOV8K1		BOV8K2	2	B0V8K2	!	VBLKZW		VBLKZW BS		VBLKAB	
Sample	RFW#:	010 DI		011	L	011 DL	ı	99LVN125-M	в1	99LVN125-M	B1	99LVN127-1	MB1
Information	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	D.F.:	10.	0	1.0	0	2.0	0	1.0	0	1.0	0	1.0	00
	Units:	UG/L	1	UG/I	•	UG/L	,	UG/L	ı	UG/I	,	UG/I	Ĺ
1	,2-Dichloroethane-d4	106	8	104	%	109	8	93	ક	91	*	109	8
Surrogate	Toluene-d8	99	ક	102	8	101	४	98	ક	100	૪	101	*
Recovery	Bromofluorobenzene	100	왐	99	왐	99	ક્ષ	100	윻	101	ક	109	ક્ષ
-	:======================================		=fl===		=fl==	=======	=fl=		=fl		=fl	=========	==f1
Methylene Chl	oride	10	JBD	1	JВ	2	JBD	6		5	В	. 2	J
Acetone		17	JBD	4	JB	4	JBD	8	J	7	JВ	4	J
2-Butanone		100	U	10	U	20	U	10	Ü	10	U	10	U
Chloroform		38	JD	17		21	D	5	U	5	U	5	Ū
Carbon Tetrac	hloride	1100	D	230	E	230	D	5	U	5	U	5	U
Trichloroethe	ene	50	U	5	Ū	10	U	5	U	93	४	5	U
Tetrachloroet	etrachloroethene		U	5	U	10	U	5	U	5	Ų	5	U
Trichlorofluo	richlorofluoromethane			5	U	10	U	5	U	5	U	5	U
*= Outside of	EPA CLP QC limits.												

## Recra LabNet - Lionville Laboratory VOA ANALYTICAL DATA PACKAGE FOR TNU-HANFORD B99-008

DATE RECEIVED: 04/16/99

RFW LOT # :9904L707

CLIENT ID	RFW	#	мтх	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B0V8J2	001		W	99LVN125	04/14/99	N/A	04/21/99
B0V8J2	001		W	99LVN125	04/14/99	N/A	04/21/99
B0V8J2	001	MSD	W	99LVN125	04/14/99	n/a	04/21/99
BOV8J3	002		W	99LVN125	04/14/99	N/A	04/21/99
B0V8J4	003		W	99LVN125	04/14/99	N/A	04/21/99
B0V8J5	004		W	99LVN125	04/14/99	N/A	04/21/99
B0V8J5	004	Ď1	W	99LVN127	04/14/99	N/A	04/23/99
B0V8J6	005		W	99LVN125	04/14/99	N/A	04/21/99
B0V8J6	005	D1	W	99LVN127	04/14/99	N/A	04/23/99
B0V8J7	006		W	99LVN125	04/14/99	N/A	04/21/99
B0V8J7	006	D1	W	99LVN127	04/14/99	N/A	04/23/99
B0V8J8	007		W	99LVN125	04/14/99	N/A	04/21/99
B0V8J8	007	D1	W	99LVN127	04/14/99	N/A	04/23/99
B0V8J9	008		W	99LVN125	04/14/99	N/A	04/21/99
B0V8J9	008	D1	W	99LVN127	04/14/99	N/A	04/23/99
B0V8K0	009		W	99LVN125	04/14/99	N/A	04/21/99
BOV8KO	009	D1	W	99LVN127	04/14/99	N/A	04/23/99
BOV8K1	010	•	W	99LVN125	04/14/99	N/A	04/21/99
BOV8K1	010	D1	w	99LVN127	04/14/99	N/A	04/23/99
B0V8K2	011	•	W	99LVN125	04/14/99	N/A	04/21/99
B0V8K2	011	D1	W	99LVN127	04/14/99	N/A	04/23/99
AB QC:							
VBLKZW	MB1		W	99LVN125	n/a	N/A	04/21/99
VBLKZW	MB1	BS	W	99LVN125	N/A	N/A	04/21/99
VBLKAB	MB1	20	W	99LVN127	N/A	N/A N/A	04/23/99

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# Custody Transfer Record/Lab Work Request Page \_\_\_\_\_ of \_\_\_\_ FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS @ OF THE VOA



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Client TN	Wf	tanforo	<u>L B99</u>	-008		Refrige	rator #		11									<del> </del>	-	[
Est. Final Proj	. Samp	oling Date				#/Type	Contain	Liquid	30%	ļ						Jr	$\mu$	10	10	<u> </u>
Project # _/_C	986	-001-00	1-9999-	00		,,,,,		Solid	ــــــــــــــــــــــــــــــــــــــ									<u> </u>		
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RECRA Projec	t Mana	ger O.T	_					Solid										↓		<u> </u>
QC_AMOO	<b></b>	Deistd	TAT	30 day		Preserv	atives		Hee						11105			-	-	
Date Rec'd				5/16/29		ANALY	SES		<del></del>	_	ANIC	픣		<b> </b>	INOF	$\neg$			] ]	
Account #	1.1.10	<u>'///</u>	Date Due			REQUE	STED		Š	BNA	PcB PCB	F G			Metal	2				
			<u></u>		Matrix	-			1/1	V	<del></del>	<del> </del>	RE	CRA L		Use Only	1	1		
MATRIX CODES:	Lab				QC Chosen		Date	Time	N. S.	+							دلا ∐	\[\frac{1}{2}\]	3	
S - Soli SE - Sediment	ID	Cli	ent iD/Descripti	lon	( <b>√</b> )	Matrix		ted Collecter	3	<b>3</b>	1 1		1		ľ	3	1882	lavos	1446	1111
SO - Solid				<u> </u>	MS MSD				8					]		\	1 6	15	7.	
SL - Sludge W - Water	001	BOV8J2	)			W	414	90 0435	V					1.5		١		<b>V</b>	7	
O - Oil A - Air	10	3				1	2112.11	0947	1	†						·	77	7	7	
DS - Drum Solids	1 3	4					1 1	0969	17				1			./	7 1	1	7	
DL - Drum Liquide	14	5	-		<del>                                      </del>	1013	17	1			_				7 7	17	J			
L - EP/TCLP Leachate	5	6	<del></del>				<del>                                     </del>		1,7	<del>                                     </del>	1	_	-				7 7	1.	7	#   -
WI - Wipe X - Other		1 2	<del></del>			-	╂╌╂╌	1013	1.	-	1 +	-  -	_ _				/ 7	<del>                                     </del>	./	++-1
F - Fish	φ	7		· · · · · · · · · · · · · · · · · · ·	<del> </del> -	_	╂┼┼	1042	17	+	<del> </del>		_		_		1.7	1/	<del>.</del> 7 -	
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Special Instruction	ons;				DATE	HEVISION	. K	<u>un</u>	m	atr	ix	QC			$\vdash$		ECRA La			<del>                                     </del>
saft	Ba	9-008					',	_							Sam 1) S	nples were Shipped —	L or		C Tape Present	was: on Outer
10-95	,						2						<u> </u>		Han	d Delivere	d	Pa	ckage (	Y) or N
COMPAGN							3									ai # <u>*</u>				on Outer
	U	OMPOSITE WASTE				<u></u> ₩.	4. <u>42</u>	35 <del>7</del> 95,								mbient of Received in			Present	on Sample
•		MY21E		•			5	1		<u> 32 -</u>	-2.3	OC.			Con	dition Y	or N	41		∜) or N
•							6,	4			23				4) Li	abels Indi	cate	4) Sa	Unbroke mple/Y	or N
Relinguished	<del>-</del>	Received	Dot- 1	Reli	no an a	517	Nail	JI ALI	7	Tim			incies Betw	980	Prop	perly Pres	or N			rd Present
by		by	Date		"UT	<b>117</b>		<b>JAJ</b>	Date	''''		Samples	Labels an	<b>d</b> _		eceived V		UP	on sam	Ple Rec't Y or N
Dedue		Soler	REI	AF	17		M			COC Re	cord? Y		Hold	ting Times Y	or (N)	Co Tei	oler	_ 。		
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RECRA LabNet Use Only

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## Custody Transfer Record/Lab Work Request Page 2 of 2



FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client IA	Silent TNU							Refrige	rator#									<u> </u>		L					
		pling Date						#/Tune	Container	Liquid							-14	<u> </u>							<b>—</b>
Project #			$\bigcirc$					игтуро		Solid							$P_{i}^{T}$	Ĺ							
Project Conta								Volume	· <del>-</del>	Liquid					11	10	De	<u> </u>	1)						
RECRA Projec			700				-	YORUNIE		Solid						[	J L								
QC		_	V TAT					Preserv	atives								100								
		- A						44141.92	050			<del></del>	ANIC					INC	RG						
Date Rec'd			Date Due					ANALY REQUE	STED	<b>→</b>	Š,	BNA	Pest/ PCB	Herb				Metal	S		ļ				ļ
Account #				<del></del>		<del>-</del>			<del></del>		100			<u> </u>		BF(	CRAI		Use	Only		1		1	
MATRIX CODES: 8 - Soll SE - Sediment	Lab ID	CII	lent ID/Desc	ription		Cho	trix C sen /)	Matrix	Date Collected	Time Collected	發	¥		<u>▼</u>							12005	Cues	1446		
SO - Solid SL - Sludge						MS	MSD				\$ 3									<u> </u>	2	<del>\</del>	<del></del>		
W - Water O - Oil	OIL	BOV8KS	2 :					W	414149	1425	<b>√</b>						- ::				>	<u> </u>		11.	
A - Air DS - Drum									<u> </u>								3.4								
Solids																	19			. <u>.</u>				: -: : -: : -:	
DL - Drum Liquids	Liquids																7								
L - EP/TCLP Leachate		<u> </u>	:		<del>.</del>																	,			
WI - Wipe X - Other				<u> </u>	<u>·</u>	<b> </b>																			
F - Fish						-						-			·									+++	$\neg \neg$
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		<u> </u>	<del></del>	<u>·</u>		-					<del> </del>														
				<del></del>		$\vdash$	<u> </u>				<u> </u>						7				_				
		<u></u>				<u> </u>					L							<u></u>		<u></u>			<u></u>		<u>_</u> _
Special Instructi	Ons:						DA LEA	REVISION												REC	RA Lab	Net Us	o Only	<del> </del>	
									2 3									1) Ha	mples v Shipped nd Deli bill # Ambien	d vered -	— — 7	1) Fac 2) U	C Tape Present ckage \ Unbroke ckage \ Present	on Out Y or In on O Y or	N Outer N
1																		3)	Receive	ed in G	nod pot	~ ~, ·	- 200116		N
	<del></del>							<del></del> :	5										ndition Labels			′ 4} l	Jobroke	u ou	. 1
<b>.</b>									3				<del></del>	_		===		Pro	perly P	reserve	κd , \		nple Y C Recoi	1	
Relinquished by	by by the by							'	Received by	D	ate	Tim	.			es Betw bels an		E)	Receive	1 Jan 1		Ųpo	on Samp	e Rec	c't
Deelew		Soder	4/16/49	0430	1					1					Record	17 Y C		Ho	Iding Ti	mes Y or	N.	Cod	oler np		N •C
					J		<u> </u>	<u> </u>								<u>-</u>									

Bechtel Hanford Inc.			HAIN OF CUS	TODY/S	AMPLI	REQUES	Г	B99-008	-05 Page	1 of 3			
Collector R. Nielson/M. Baechler	• • • • • • • • • • • • • • • • • • • •		pany Contact ith Maki		phone No. 73-4989			Project Coordinator TRENT, SJ		Price Code	Data '	Turnaround	
Project Designation	ing and Analysis - Bi-Wee	Samp	ling Location  West		<del></del>		SAF No. B99-008		(707	<u>-) 4</u> :	) 45 Days		
Ice Chest No. 96-013			Field Logbook No.						Method of Shipment - Hand deliver RIN 4/12/99 Federal Expr				
Shipped To TIMARECRA RUN 4//5/49			Offsite Property No. A990112, A990113						Bill of Lading/Air Bill No. 42357952 4721, 423579				
<u></u>			_	<b>T</b>				COA				<del></del>	
POSSIBLE SAMPLE HAZARDS/REMARKS			Preservation	None	None	Cool 4C	HNO3 to 1	oH Cool 4C	HCl to pH < Cool 4C				
			Type of Container	P	P	P	P	P	aGs*				
Special Handling and/or Cool 4C	Storage		No. of Container(s)  Volume	l 20mL	l 125mL	500mL	1 500mL	, 1000mL	3 40mL				
	SAMPLE ANA	LYSIS		Activity Scan	pH (Water) - 9040	IC Anions - 300.0 (Nitrate)	Hardness 130.2	- BOD - 405.1	See item (1) Special Instructions				
Sample No.	Matrix *	Sample Date	Sample Time						M.E.				
1 B0V8J2	Water	4-14-6	19 0935	K	K	X	X	K	Υ				
B0V8J3	Water	4-14-9	9 0947	K	X	X	Х	X	×				
B0V8J4	Water	4-14-6	9 0959	K	Ψ.	4	Ý.	Χ	X				
B0V8J5	Water	4-14-0	19 1013	γ	Χ	X	X	Χ_	X				
B0V8J6	Water	4-14-0	19 1013	<u>γ</u>	X	X	乀	X	X				
Relinguished by Relinguished by Relinguished by A	SPECIAL INSTRUCTIONS  ** Sample analysis for nitrate by IC 300.0 and BOD by 405.1 are for information only.  ERC acknowledges that the holding time may not be met.  (1) VOA - 8240A (SW-846) (2-Butanone, Acetone, Carbon tetrachloride, Chloroform, Methylenechloride, Tetrachloroethene, Trichloroethene, Trichloromonofluoromethane)  235 7952 4710							Water Vapor	Nid				
	Nelson 415 pg  Date/Time	Received By	ed GN	te/Time		- 7952 473 		32	.3				
LABORATORY Received SECTION	Terle	c 4/161	199 0930	Tit	ic	4235 795	52 4161 	L			Date/Time		
FINAL SAMPLE Dispos DISPOSITION	al Method					Dispose	ed By				Date/Time		

Bechtel Hanford Inc.			CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST  B99-008-							9-008-05	95 Page 2 of 3 CT		
Collector R. Nielson/M. Baechler	<u> </u>		any Contact th Maki					Project Coordinator TRENT, SJ		Price Code		Data Turnaround	
Project Designation 200-ZP-1 Process Sampling and Analysis - Bi-Weekly/Quar			ling Location West	3,5-1								45 Days	
Ice Chest No. Sampling a		-7. <	Logbook No.				B99-008  Method of Ship  Hand deliver	pment K	UN Federal EV		14pnss 12579524721		
Shipped To  -TMA/RECRA  4/16/99 RJN		Offsite	Property No. A990112,				Bill of Lading/	Air Bill No 2357	) 473				
			,					COA	R20	820 1071	هُ کِ		
POSSIBLE SAMPLE HAZA	RDS/REMARKS		Preservation	None	None	Cool 4C	HNO3 to p <2		HCl to pH <				
			Type of Container	P	P	P	P	Р	aGs*				
Special Handling and/or Stor	age	No. of Container(s) Volume	20mL	l l25mL	500mL	500mL	. 1000mL	3 40mL					
	SAMPLE ANAL	LYSIS	L-,,	Activity Scan	pH (Water) - 9040	1C Anions - 300.0 (Nitrate)	Hardness 130.2		See item (1) Special Instructions	ı			
Sample No.	Matrix *	Sample Date	Sample Time										
B0V8J7	Water	4-14-9	19 1042	X	X	χ	K	¥	X				
B0V8J8	Water	4-14-9	9 1105	V	X	X	X	Y	X				
B0/8J9	Water	4-14-9	9 1241	γ	Ϋ́	X	X	X	1				
B0V8K0	Water	4-14-9	9 1230	V	Y	X	Х	X	人				
B0V8K1	Water	4-14-9	9 1403	Ý	<u>x</u>	<u> </u>	X	<u> </u>	K	<u> </u>			
CHAIN OF POSSESSION  Relinquished By A 4160	ale/Time  14/04  SOV 4/16  ale/Time	45 " S ERC	acknowledges ( 'OA - 8240A (S	for nitrate I that the hol SW-846) (2	S by IC 300.0 and B ding time may no 2-Butanone, Aceto ethene, Trichloroo	t be met. one, Carbon	tetrachloride, Cl	hloroform,	Matrix * Soil Water Vapor Other Solid Other Liquid	;			
	Nickon 464 Date/Time	Received By	eday	ate/Time				. 12	***		·		
LABORATORY Received By SECTION  FINAL SAMPLE Disposal Me DISPOSITION	ethod Ø	oder 4	16 99 093	Tie S <i>O</i>		Dispos	sed By					nte/Time	

Bechtel Hanford Inc.			CI	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						B99-008-05		Page 3 of 3			
Collector R. Nielson/M. Bacchier				Company Contact Telephone No. Keith Maki 373-4989						inator	Price Code		Data Turnaround		
Project Designation 200-ZP-1 Process Sampling and Analysis - Bi-Weekly/Quar			Sampling Location 200 West						FRENT, SJ SAF No. B99-008		•			45 Days	
Field Fashcal No							<del> </del>		North of of China and China						
Shipped To TMA/RECRA 4(15/99 RIN)				Property No.	4990			Bill of Lading/	35579521	eral Express 4732					
								F	COA						
POSSIBLE SAMPLE HAZAI	RDS/REMAR	ıks		Preservation	None	None	Cool 4C	HNO3 to p	iH Cool 4C	HCl to pH Cool 4C					
				Type of Container	P	P	Р	P	P	aGs*					
No. of Contain  Special Handling and/or Storage  Cool 4C  Volume					1 20mL	125mL	1 500mL	1 500mL	1 1000mL	3 40mL					
	SAMPL	E ANALYSIS			Activity Scan	pH (Water) - 9040	IC Anions - 300.0 (Nitrate)	Hardness 130.2	- BOD - 405.1	See item (1) Special Instructions					
Sample No.	Matrix	Samp	le Date	Sample Time						Marka in		Margarati	MAJACACIA CON		
B0V8K2	Water	4-	1494		X	Υ.	Ϋ́	X	X	Χ	College - Constitution		17 47		
								. <u></u>							
	<u> </u>		_												
CHAIN OF POSSESSION  Shapiished By  Relinquished By  Relinquished By  Relinquished By  Relinquished By  Relinquished By	te/Time te/Time te/Time te/Time	(I) V Methy	cknowledges t OA - 8240A (S	for nitrate b that the hold SW-846) {2-	y IC 300.0 and Bi ling time may not Butanone, Aceto	be met. ne, Carbon i	l are for informat tetrachloride, Chle lloromonofluorom	oroform,	Matrix Soil Water Vapor Other Solid Other Liquid						
LABORATORY Received By SECTION		oler 41	u.lee	*#Z-	Titl	e						Dat	e/Time		
FINAL SAMPLE Disposal Methal DISPOSITION	hod O	nevr 41	<u>(G177</u>	<u>0930</u>			Dispos	ed By			······································	Date	c/Time	·	

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